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ABSTRACT

The construct validity of the Job Diagnostic Survey was examined in terms of its ability to detect expected mean differences in perceived job characteristics between people in: (a) large and small organizations, (b) large and small work groups and (c) high and low status jobs. These subgroups were compared using multivariate and univariate stepwise regressive analyses. Examination of significant effects and mean differences provided overall support of the construct validity of the Job Diagnostic Survey and suggest that macro variables such as organizational size and work group size are reflected in people's perceptions of their jobs. (Author)

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Organizational Size, Work Group Size, Job Level, and Perceived Job Characteristics

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Running Head: Job Perceptions

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Research concerning perceived job dimensions has been stimulated by the development of the Job Diagnostic Survey (Hackman and Oldham, 1975). This instrument includes measures of five job characteristics each measured with three seven point items. The five core dimensions include autonomy, task significance, task identity, skill variety and feedback.

One area of research activity involving the Job Diagnostic Survey has centered on the relationship between these perceived job characteristics and job satisfaction and/or individual differences (Rabinowitz, Hall, and Goodale, 1977; Schmitt, Coyle, White, & Rauschenberger, 1978; Stone, 1975, 1976; Wanous, 1974). High positive correlations between job perceptions and job satisfaction are usually observed while evidence with respect to the importance of individual differences in moderating this relationship is mixed (see Stone, 1976 and Wanous, 1974).

The dimensionality or construct validity of the Job Diagnostic Survey has been the second major issue researchers on perceived task design have addressed. Hackman and Oldham (1975) reported that the internal consistencies of their scales ranged from .56 to .88 and between scale correlations from .12 to .28 in a sample of 658 workers from seven organizations. These results were taken as evidence of the multidimensionality of the Job Diagnostic Survey. Employing an instrument similar to the Job Diagnostic Survey, Sims, Szilagyi, and Keller (1976) found evidence for the five dimensions listed above plus a friendship dimension in their analysis of responses of subjects in two different organizations. However, Dunham (1976), analyzing the responses of 3610 exempt corporate personnel, found little evidence to support a five factor solution and felt that a unidimensional solution was most parsimonious. Dunham, Aldag, and Brief (1977) analyzed the responses of 20 different groups

to the Job Diagnostic Survey and identified two, three, four, and five factor solutions for various samples. Dunham et al., (1977) suggest that users of the Job Diagnostic Survey do factor analyses in every sample in which they use the instrument.

The present paper seeks to establish that the job perceptions measured by the Job Diagnostic Survey are related to organizational size, work group size, and job level. Theory and research on all three variables would suggest that these relationships exist though the authors know of no previous empirical study of any of the hypotheses proposed below.

Organizational structure dimensions have long been considered to have a major impact on individual behavior and attitudes (Argyris, 1964; Likert, 1967; and Weber, 1947). For example, modern theorists generally deny the negative effects of increased bureaucratization, which Halland Tuttle (1966) found to be associated with increased organizational size, on morale, employee resistance and turnover. More specifically, Blau (1970) produced both rational and empirical support regarding the hypothesis that increased organizational size generated greater structural differentiation. This increased differentiation, he found, led to greater problems of coordination, communication, and control which require larger administrative units and larger staff components. Further support for this hypothesis can be found in the work of Pugh, Hickson, Hinings and Turner (1969), which found the degree of structuring activities directly related to the size of the total organization. Gouldner (1954) has also shown that increased size and bureacracy lead to increases in formalization or impersonalization.

These studies suggest that employees in small organizations will perceive their jobs differently than those in larger organizations. In

particular, we would expect those in large organizations to report less autonomy because of the increased formalization and structuring activities; less skill variety because of increases in specialization associated with structural differentiation; and less of a feeling of completing a "whole" task that gives them feedback on how they have performed because the portion of a task they complete will be less as specialization increases. The perceived significance of one's task should also be less in large organizations where many may be doing the same thing or where one is doing only a very small portion of some larger task or job.

Work group size, as well as organizational size/complexity was identified by Worthy (1950) as a major determinant of employee morale. He proposed increasing work group size to make it impossible for supervisors to be overly directive. More recently, Mahoney, Frost, Crandall and Weitzel (1972) found "unit size" to be a relevant variable in understanding organizational phenomena. They found that increasing unit size resulted in more activities, greater work variety, and greater delegation of authority. Like Worthy (1950), Mahoney, et al. (1972), viewed this increase in delegation of authority positively since it should provide greater opportunity to participate in decision-making and higher order need satisfaction. They proposed that the increase in unit size permits greater flexibility in work assignments and more potential for cross-training individuals.

We expect to find work group size to be positively related to feelings of autonomy because of the greater delegation of authority found in larger work units. Further, employees in large work groups should report greater task identity and feedback from the job because a greater portion of an entire piece of work is completed in larger work units. Finally, skill

variety should be found to increase with work group size because of the wider range of jobs completed in this situation.

In their review, Porter and Lawler (1965) conclude that organizational level is strongly related to both attitudes and behavior. For example, the positive relationship between job level and job satisfaction is well-founded and consistent (Mahoney et al., 1972). Some proposed explanation for this phenomenon include the fact that higher level jobs offer more control over work and greater ego gratification from the challenge and variety of work. Studies by Friedmann and Havighurst (1962) and Morse and Weiss (1962) suggest that those working at the lower levels more often view work as a means to earn a living, while higher level employees more often view it as pleasurable in itself and as a means of fulfilling a variety of psychological needs. We expect to find such differences in our data. In particular, as job level increases, the perceptions of one's job regarding autonomy, skill variety, and task significance should increase. Perceptions of feedback from the job and task identity, however, are problematic since many upper-level jobs are supervisory in nature and may not allow much actual task-oriented activity, at least on a day-to-day basis.

Porter and Lawler (1965) and James and Jones (1976) both note the fact that the effect of structural variables often interacts with job levels. For example, Porter (1963a, 1963b) reports that lower and middle managers in small companies were more satisfied than upper-level manager, while in large companies, upper management was more satisfied than lower management. Mahoney et al. (1972) found an interaction effect between organization size and work gro size. More specifically, they found that "degree of delegation of authority" in small work groups is greater in large companies than in small companies.

Although our study of the interactions will be more of an exploratory nature than confirmatory, we expect job level will interact with organizational

and work group size. We also hope to find an interaction for organizational size and work group size for some of the core job dimensions. For example, people working in large work groups in small organizations should find greater variety and task significance than those in large groups in small organizations.

In summary, then, the purpose of the present paper is to investigate the effect of organizational size, work group size and job level on employees' job perceptions.

METHOD

Subjects

Subjects included 574 students in vocational education programs at a large community college in a medium-sized metropolitan area. The subjects responded to a mailed questionnaire, the major purpose of which was to ascertain what variables might be associated with completion of community college programs. All either held full time jobs or were asked to describe their most recent full time job. Their average age was 32.7 years. Two hundred ninety-five were female; 279, male. They reported holding an average of 3.5 full time jobs since they had left secondary school. The sample of 574 represents a 40 per cent return rate; on the age and sex variables (the only two for which data were available), there were no significant differences between respondents and nonrespondents.

Measures

The 15 items of the Job Diagnostic Survey were part of the larger mailed questionnaire. The socioeconomic status of the subjects' jobs was coded according to Duncan's scale (Reiss, Duncan, Hatt & North, 1961). This scale includes consideration of pay level and educational requirements associated with jobs. Work group size was measured by a single item on which the respondents were asked to indicate their work group size with

response options ranging from "less than 5 people" to "more than 25 people". Organizational size was indexed by a single item with response options ranging from "less than 20" to "more than 10,000".

Data Analysis

The data were analyzed using multivariate multiple regression analysis. The dependent variables included the five core job dimensions of the Job Diagnostic Survey; the independent variables included the socioeconomic status of the subjects' jobs, work group size, and organizational size as well as the interactions of these three variables represented by their products. This analysis was followed by stepwise univariate multiple regression analyses for each of the dependent variables. In these analyses, the interactive product terms were entered second after socioeconomic status, work group and organizational size as Cohen suggests (Cohen & Cohen, 1975; Cohen, 1978).

RESULTS

In Table 1, the intercorrelations, means, and standard deviations of all variables are presented. Because of the relatively high degree of

Insert Table 1 about here

intercorrelation of the dependent variables, multivariate multiple regression was used to assess the degree of relationship between the dependent and independent variables.

The results of the multivariate multiple regression indicated a significant relationship existed between the core job dimensions and organization size, work group size, socioeconomic status of subjects' jobs, and the interactions of these terms, $F(5,507) = 41.487$, $p < .00001$. Following the finding of a significant multivariate relationship, univariate hierarchical regression analyses on each of the dependent variables were computed. These analyses are summarized in Table 2. As can be seen in Table 2, all five

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Insert Table 2 about here

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analyses produced statistically significant results. However, none of the interactions were significant, hence only the first step of the stepwise solution is presented.

To ascertain what degree of difference the statistically significant results in Table 2 indicated in terms of raw scores on the dependent variables the sample was split into "high" and "low" groups on each of the three independent variables. Those individuals whose scores were above the mean were classified as "high"; those below the mean were classified as "low". Means and standard deviations for each of the eight resultant groups are presented in Table 3.

Insert Table 3 about here

DISCUSSION

Tables 1 to 3 indicate moderate support for most of the hypothesized relationships. Job status is positively and significantly correlated with all of the core job dimensions except for Feedback from the Job. Feedback from the Job may be less for higher level jobs especially if they are supervisory in nature since supervisors would be less likely to be performing

the actual work of an organization. If this is true, the supervisory nature of one's job should moderate the relationship between Feedback and Job Status. Job Status is most strongly related to Autonomy and Skill Variety. The relationship of Task Significance with job level is statistically significant but quite low suggesting there is little difference in how people with differing job levels perceive the significance of their jobs.

Organizational size is significantly and negatively related to Autonomy, Task Identity, and Feedback from the Job, suggesting as do organizational theorists (for example, Argyris, 1964) that the increased specialization and bureaucratization which almost always accompanies increased organizational size decreases one's perceptions of the autonomy one's job affords and the degree to which one perceives an identity with the task he/she performs.

Work group size is significantly related only to the Task Identity variable. This negative correlation indicates less identification with complete projects in large work groups. Contrary to the hypothesis involving the Task Identity--work group size relationship, this suggests that small work groups, perhaps where everyone can see what is going on, are more likely to produce perceptions of greater Task Identity. The relationship of work group size and Task Significance is significant in the regression analysis because of the small positive correlation with work group size (also reported in previous research, James & Jones, 1976). This suggests some trend for people in large work groups to perceive their jobs as more significant; a finding consistent with those reported in Porter and Lawler's review (1965) of research dealing with the satisfaction of managers in large as opposed to small organizations.

The most notable result of the regression results is the nonsignificance of the interactive terms produced by the products of the three independent variables. This is inconsistent with the hypotheses put forward in the introduction to this paper and with ideas proposed by Hall (1962) and Lawrence and Lorsch (1967). The regression results, both multivariate and univariate, suggest there are significant relationships between the two sets of variables, the multiple correlations, however, indicate that less than six per cent of the variance in job perceptions is accounted for. Since there were very low intercorrelations among the three variables entering the regression equation in the first step, there is little or no problem with multicollinearity and the significant predictors in the regression analyses of Table 2 parallel the significant correlations with the dependent variables in Table 1.

Table 3 was presented to assess the degree of practical significance of the results in terms of raw scores on the job core dimensions. The largest single correlation was that between Job Status and Skill Variety; raw score differences between high and low status jobs on the Skill Variety measure are approximately .4 standard deviations. A marginally significant correlation (.10) corresponded to a difference of about one quarter of a standard deviation.

The results taken as a whole can also be viewed as evidence for the construct validity of the Job Diagnostic Survey. Previous research results and theory suggested the relationships explored in this paper, though they have never been explored using the perceptual measures constructed by Hackman and Oldham (1975). While the results were not spectacular in terms of shared variance, they do suggest that macro variables such as organization size and work group size are reflected in people's perceptions of their jobs.

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Table 1

Means, Standard Deviations and Intercorrelations of Dependent and Independent Variables*

	Mean	SD										
1. Autonomy	14.99	4.56										
2. Skill Variety	14.49	5.10	.61									
3. Feedback	15.74	3.63	.47	.41								
4. Task Identity	14.91	4.47	.50	.39	.45							
5. Task Significance	15.95	4.19	.45	.58	.37	.23						
6. Work Group Size(WS)	3.27	1.89	-.01	.05	-.01	-.16	.08					
7. Organizations Size (OS)	4.26	2.31	-.11	-.03	.14	-.15	.03	.17				
8. Job Status (JS)	47.11	20.04	.18	.24	.05	.11	.09	-.09	.05			
9. WS x OS	14.64	12.22	-.08	.00	.08	-.21	.06	.76	.67	-.09		
10. WS x JS	150.64	111.69	.12	.19	.04	-.04	.13	.76	.10	.50	.35	
11. OS x JS	203.16	145.99	.04	.12	-.04	.00	.08	.02	.73	.64	.36	.53
12. OS x WS x JS	668.17	617.08	.04	.12	-.02	-.10	.10	.64	.54	.39	.65	.81
			1	2	3	4	5	6	7	8	9	10

* Correlations of .09 or greater are statistically significant at the .05 level.

Table 2

Regression Analyses of Core Job Dimensions on Organization Size, Work Group Size, and Job Status

	Autonomy			Skill Variety			Feedback from the Job			Task Identity			Task Significance		
	B[a]	b	r	B	b	r	B	b	r	B	b	r	B	b	r
Organization Size	-.129*	-.253*	-.114*	-.053	-.116	-.026	-.142*	-.223*	-.135*	-.130*	-.251*	-.145*	.009	.017	.029
Work Group Size	.024	.058	-.014	.080	.214	.050	.023	.043	-.01	-.128*	.303*	-.159*	.090*	.199*	.083
Job Status	.191*	.043*	.182*	.249*	.063*	.240*	.058	.011	.049	.111*	-.025*	.115*	.097*	.020*	.090*
Multiple R	.222			.255			.148			.228			.128		
F	8.869*			11.933*			3.856*			9.413*			2.874*		

[a] B refers to standardized regression weights, b to unstandardized weights

* p < .05

Table 3

Means and Standard Deviations for Subgroups Based on Organization Size, Work Group Size, and Socioeconomic Status of One's Job

			Autonomy		Skill Variety		Feedback from Job		Task Identity		Task Significance		N[a]
			$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	
Low SES	SMALL[a] WGS	Small OGS[b]	15.03	4.60	13.47	5.38	15.88	3.53	15.08	4.02	15.56	4.65	96
		Large OGS	13.35	5.12	12.79	5.78	15.07	4.27	14.14	4.98	14.98	4.58	43
	LARGE WGS	Small OGS	14.76	4.67	14.11	5.16	16.22	3.58	14.50	4.85	16.00	4.78	64
		Large OGS	13.70	4.96	13.40	5.69	14.79	3.73	12.70	5.08	15.83	3.99	63
High SES	SMALL WGS	Small OGS	15.25	4.45	15.07	4.62	16.12	3.62	16.18	4.08	15.68	4.35	92
		Large OGS	15.38	4.58	15.27	4.52	15.55	3.62	15.48	4.25	16.26	3.33	73
	LARGE WGS	Small OGS	16.72	3.31	16.47	3.90	16.26	3.29	15.45	4.10	17.17	3.45	47
		Large OGS	15.66	3.71	15.95	4.60	15.71	3.27	14.88	3.84	16.68	3.59	41

[a]Dividing on the mean of the work group size variable meant that work groups with more than 15 employees were classified as large.

[b]Dividing at the mean on this variable meant organizations with more than 500 employees were classified as large.